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ABSTRACT

The purpose of this study was to investigate the effects of intelligence test results communicated to teachers in various ways by elementary school counselors on (a) teachers' perceptions, and (b) subsequent student achievement and IQ scores. Teacher awareness of student IQ appeared not to influence, to a statistically significant degree, her ratings of students overall achievement relative to one another. It did, however, appear to influence (p .05) the IQ scores she assigned to her students. When the score reported to the teacher was considerably discrepant (10 points or more) from that which she estimated for the student, a second estimate of the child's IQ score appeared to change considerably. The manner in which IQ test results were communicated to teachers appeared to have no significant influence on their estimates of students' scores. However, it did appear to influence their estimates of the students' overall achievement relative to one another. The results indicate that the procedure of changing teacher expectancy must be thoroughly investigated. (Author/GS)

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Interpreting Intelligence Test Results to Elementary Teachers

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Review of Pertinent Literature and Related Research:

Several studies (Davidson and Lang, 1960; Flanders, 1965; Flanders and Havumaki, 1960; Hill and Sarason, 1966; Lippitt and Gold, 1959; Ludwig and Maehr, 1967; Mayer, Kranzler, and Matthes, 1967; Rosenthal and Jacobson, 1968; Spaulding, 1964; Staines, 1958) have indicated that the student's inter-personal relationship with his teacher is a factor which influences academic performance. Probably the most well known of these studies is the one by Rosenthal and Jacobson (1968). These investigators concluded that a teacher's perception or expectancy of a child's "potential" appears to be a highly relevant variable in influencing childrens' academic performance.

Rosenthal and Jacobson (1968) administered Flanagan's (1960) non-verbal test of intelligence to each of 18 classrooms, grades one through six. Flanagan's I.Q. test was disguised as a test to predict academic "blooming" or intellectual gain. Twenty per cent of the students in each of the 18 classrooms were randomly selected and then identified to their respective teachers as children "who would show unusual academic development." For the 18 classes combined, those children whose teachers expected them to gain in performance showed a significantly greater gain in I.Q. on Flanagan's test (1960) than did the control children--children from whom the teachers did not expect intellectual gain.

Similar findings have also been demonstrated with animals. Experimenters who were led to believe that rat Ss had been bred for superior learning obtained a superior performance from their rat Ss than experimenters who had been led to believe that their rat

Ss had been bred for inferior learning ability (Rosenthal and Fode, 1963; Rosenthal and Lawson, 1964).

As one reviews the literature concerning the possible influence intelligence test scores may have, it becomes apparent that many (Garry, 1963; Loretan, 1967; Rudikoff & Kirk, 1959; Seashore, 1959; Willey & Andres, 1955) believe such information affects teachers' perceptions and behavior towards their pupils. Such beliefs and conclusions (Rosenthal and Jacobson, 1968) have generated much confusion. For as Thorndike (1968) has concluded, "the basic data upon which this structure has been raised are so untrustworthy that any conclusions based upon them must be suspect (p. 711)." Thus, if such an expectancy effect does exist, it must be demonstrable and the conditions under which it exists specified.

Perhaps, part of the problem, assuming that one exists, lies in the manner in which "potential," or I.Q. test results are communicated to teachers. One might also ask if intelligence test results have a greater influence on teacher perceptions when they are discrepant or similar to the teacher's initial perception of the child's I.Q.

Purpose:

The proposed study attempts to investigate the effects that test results communicated to teachers in various ways by the school counselor have on (a) teachers' perceptions, and (b) subsequent student achievement and I.Q. scores. The criteria for this study were:

(a) Teacher perception of student intelligence. (See Appendix)

(b) Teacher perception of student academic achievement. (See Appendix)

(c) Student achievement test scores. (Metropolitan Achievement Tests - Primary II)

(d) Student intelligence test scores. (Flanagan's Tests of General Ability, 1960)

Description of the Activities (Procedures):

Subjects (N = 990) were selected from the second grades of elementary school systems throughout the state of Illinois which contained elementary school counselors. Only school systems that did not administer I.Q. tests during the first grade and agreed not to administer I.Q. tests during the second grade were selected. Second grade classrooms from the Illinois area were chosen for the following reasons: (1) Standardized achievement test can be administered early during the school year; (2) Rosenthal and Jacobson (1968) reported that the effects of teachers' expectancies (or perceptions) operated primarily at grades one and two ($p. < .002$ and $< .02$ respectively); (3) the possibility of a follow-up study the succeeding school year; (4) practical considerations such as accessibility and testing policy; and, (5) the project was funded by the Office of the Superintendent of Public Instruction for the State of Illinois.

School systems, which contained second grade classrooms meeting the above guidelines, were selected for the study. A total of 33 classrooms and six counselors were involved. The counselors and their respective classrooms were randomly assigned to one of six treatment conditions except in one instance in which half the classrooms one counselor was responsible for were randomly assigned to the control group (Treatment six). There were 82, 195, 233, 234, 104, and 142 subjects respectively in treatments one through six. (See the appendix for a description of the treatment conditions). Thus, with the exception of group four, in which two counselors were used, a single counselor was assigned to each treatment condition.

At the beginning of the study, each participating second grade teacher was informed that "The study is basically exploratory in nature. The main purpose is to investigate change in academic achievement over time."

During early November pre-measures were obtained of student I.Q. and achievement levels, and of teachers' estimations or perceptions of their students' I.Q.'s and relative achievement. Within two weeks the S's I.Q. results were communicated to their teachers by the school's counselors in five different ways as described in the first five treatment conditions.

Following the counselor's interpretation of the I.Q. scores to the teachers, the teacher perception instruments were re-administered to assess any immediate change in teacher's perceptions of the students' I.Q. and achievement scores as a function of the I.Q. score interpretation. This concluded Phase I of this study.

Phase II of this study dealt with a collection of data during the month of April. The teachers' estimations or perceptions of the students' I.Q.'s and relative achievement were collected for the third time one week prior to the administration of the I.Q. and achievement tests. The teacher perception instruments were re-administered to assess any long range change in teacher's perceptions of the students' I.Q. scores and relative achievement scores. In addition an attempt was made to determine if the changes in achievement were different for the five treatment groups and the control group.

Treatment Conditions:

The treatment condition instructions can be found in the appendix as they were given to the counselors.

Results from Phase I:

The results of the data analyses are found in Tables I through VI. The first question was concerned with the influence of teacher awareness of I.Q. on the teacher's rating of her pupils' I.Q. and achievement. The results in Table I indicate that teachers were influenced by the knowledge of the I.Q. results. The criterion used in Table I is a logarithmic transformation of a correlation coefficient representing the relationship that exists between the teacher's first estimate of the pupils' I.Q. and her estimate after the results were reported. In this analysis there were two treatment conditions: one group had some knowledge of the test scores (Treatments one through five combined) and the second group had no information (Treatment six) with respect to the test results.

Table I

Source	df	SS	MS	F
Treatments	1	1.570	1.570	5.71*
Within	31	8.531	.275	
Total	32	10.101		

$r_1 = .88$

$r_2 = .91$

where r_1 equals the mean test-retest correlation for the awareness group and r_2 equals the unaware group. Fisher's Zr transformation was used in this analysis.

*p. $<$.05

Table II indicates that the teachers' awareness of intelligence test scores had no significant influence on their ratings of student achievement level. The criterion used in Table II is a logarithmic

transformation of a correlation coefficient that was obtained between the teacher's first estimate of the pupils' general achievement and her estimate after the results were given to her with respect to the pupil's general ability. The treatment conditions were the same as those discussed with respect to Table I.

Table II

Source	df	SS	MS	F
Treatments	1	.247	.247	.473
Within	31	16.175	.522	
Total	32	16.422		

In an effort to determine if the teacher's initial dissonance level (difference in reported score and teacher's estimated score) had an effect on the teacher's subsequent estimation of her students' I.Q. scores, the data were analyzed in the following manner: If the teacher's initial estimate of a pupil's obtained I.Q. was within five score points, the pupil was placed in group 1. If the teacher over or underestimated the pupil's obtained I.Q. score by more than ten points the pupil was placed in group 2. After the teachers had estimated I.Q. scores the second time, the absolute differences were used as the criterion scores in Table III. As indicated in Table III, the greatest absolute change in I.Q. estimate occurred in the high dissonance group.

Table III

Source	df	SS	MS	F
Dissonance levels	1	545.74	545.74	19.24*
Within	511	14498.46	28.37	
Total	512	15044.20		

$X_1 = 5.212$

$X_2 = 3.017$

Where X_1 is the mean absolute change for the high dissonance group and X_2 is the mean absolute change for the low dissonance group.

*$p < .05$

In the final set of analyses two factors were analyzed: (1) dissonance level, and (2) treatment conditions (the first five). Three dissonance levels were defined as follows: (a) underestimate of I.Q. (at least 10 points); (b) correct estimate of I.Q. (within 5 points); (c) overestimate of I.Q. (at least 10 points). The criterion for these analyses was the observed difference between the first and second estimate of the pupil's I.Q. (Post minus Pre).

In Table IV the mean differences between the first and second estimate of the pupils I.Q. (Post minus Pre) are reported for each of the five treatment conditions by dissonance level. A two-way analysis of variance was employed with this data and a significant interaction was found. Since the main effects questions could not be answered, a visual investigation of the individual cell means is more meaningful.

Table IV

	Underestimate	Correct	Overestimate	F
T_1	2.000	-5.740	-2.760	2.81
T_2	4.830	-4.240	-4.800	5.74*
T_3	0.000	0.300	-2.500	5.75*
T_4	9.615	-1.824	-5.000	22.13*
T_5	-0.333	0.452	-2.755	6.40*
F	5.14*	2.28	1.31	

*p < .05

It is interesting to note that the manner of reporting the results to the teachers did not seem to affect the general trend for those teachers who were correct or overestimated the pupil's obtained IQ. The results for the underestimate group is quite unique with respect to the remainder of the data. The results in Table IV indicate that for the underestimated group there was little if any change in the treatment conditions in which some type of commitment was employed in the test interpretation (Treatments 3 and 5). It is also interesting to note that the smallest absolute change in all three dissonance levels occurred in the commitment treatment conditions.

Results from Phase II:

The results from the second phase were used to investigate the change in achievement from November to April. In Table V the mean standard scores for the seven achievement measures for November and April are reported. No systematic pattern in the difference between means for the six conditions was noted. Although the observed standard scores were lower in Treatment 4, the pattern of change was similar to that of the other five conditions. Although the means in Treatment 4 were quite lower than the means in the

other treatments it is important to note that the variability of these scores was not significantly different from the scores in the other treatment conditions.

Table V

		T_1	T_2	T_3	T_4	T_5	T_6
Word Knowledge	Pre	43.41	44.92	41.93	36.17	40.60	41.69
	Post	46.65	46.42	45.09	38.06	47.18	45.30
Word Disc.	Pre	44.82	39.50	42.59	32.59	41.10	41.58
	Post	46.89	47.42	46.75	36.58	47.01	45.73
Reading	Pre	43.62	38.93	43.06	36.18	42.59	40.14
	Post	47.84	46.46	46.70	37.70	47.97	44.65
Spelling	Pre	44.54	45.73	43.46	31.00	37.71	40.23
	Post	49.68	48.09	48.77	36.09	47.11	44.14
Arith (A)	Pre	40.48	41.85	42.85	34.74	37.85	38.32
	Post	47.40	45.65	47.00	37.21	46.67	43.20
Arith (B)	Pre	41.98	40.66	40.00	31.54	40.04	37.80
	Post	55.61	48.52	48.80	39.45	47.69	44.61
Total Arith	Pre	40.61	42.88	40.94	33.81	38.43	37.30
	Post	50.63	42.88	40.94	33.81	38.43	37.30

A second relative issue with respect to the data collected during the second phase of the study was the problem concerning the stability of the teachers' estimates of I.Q. and achievement. The data reported in Table VI provides some relevant information with respect to this issue.

It is interesting to note that the estimated I.Q. score was more affected over a period of time than the estimated achievement rank. The correlation coefficients reported in Table VI indicate that the teachers were quite consistent in their estimates of achievement from the second observation date to the third observation date, which was four months later, with the exception of those teachers in Treatment 4. It would seem that the teachers in

Treatment 5 changed little during the duration of the study. The correlation coefficients in Treatment 3 indicate that the teachers were greatly influenced by the scores reported, and that the change remained evident over the four months. It would seem that the technique employed in Treatment 5 has little effect on the teachers' expectancy in terms of achievement.

Table VI

	T_1	T_2	T_3	T_4	T_5	T_6
Est. Ach.						
Pre vs. Mid	.79	.79	.36	.41	.76	.76
Pre vs. Post	.54	.64	.37	.53	.68	.69
Mid vs. Post	.73	.78	.82	.30	.83	.83
Est. IQ						
Pre vs. Mid	.58	.55	.34	.40	.85	.91
Pre vs. Post	.32	.44	.30	.13	.83	.15
Mid vs. Post	.40	.67	.83	-.08	.80	.37

The effects of the treatments on the estimated I.Q. is surprising. With the exceptions of Treatment 5, the consistency of the teachers' estimates are rather low. As with the estimated achievement ranks, Treatment 3 seems to have had the greatest effect in changing the expectancy of the teachers while Treatment 5 had little effect.

Another objective of this study was to determine if a significant change in the observed I.Q. scores was detected. No significant changes were found in any of the treatment conditions. This result is contradictory to the results reported by Rosenthal and Jacobson (1968).

Discussion

It appears that teachers' perceptions, as measured by the IQ scores they assign their students, can be immediately modified.

The most effective way of modifying these perceptions is by the counselor reporting the I.Q. score and then interpreting it in terms of how well or poorly the student will do in the future (Treatment 3). The results also strongly suggest that an indication of academic "blooming" without reporting a score (Treatment 5) has little effect on the perception of the teacher. This conclusion is most evident in the stability from pre to mid to post ratings in Treatment 5 while in Treatment 3 the pre vs. mid relationship is rather small, but the mid vs. post is quite high. These results would suggest that Treatment 3 modified the teachers' expectations and that this modification remained stable over the duration of the study.

Although several of the results of this study are different from those reported in Rosenthal and Jacobson (1968), the results are similar in that the changes in achievement were not evident after four months in any of the treatment conditions.

The results of this study indicate that the procedure of changing teacher expectancy must be thoroughly investigated. It would seem that a general commitment by an outside consultant is not sufficient to modify a teacher's expectancy. If a score is reported and a commitment made, it would seem that the teacher's expectancy is modified and the change seems to be permanent for at least four months.

APPENDIX

In order for this study to be worthwhile and accurate, it is necessary that the cooperating counselors follow the instructions to the letter. We would appreciate your cooperation in carrying out the following instructions:

You, the counselor, will receive a list of pupils' names in alphabetical order for each class involved in the study. Beside each name will be the child's I.Q. scores as determined by Flanagan's Tests of General Ability. Simply submit a copy of this list of names and I.Q.'s to the respective teacher. Please do not discuss the scores in any manner. Merely submit the list without any interpretation and/or discussion.

In order for this study to be worthwhile and accurate, it is necessary that the cooperating counselors follow the instructions to the letter. We would appreciate your cooperation in carrying out the following instructions:

You, the counselor, will receive a list of pupils' names in alphabetical order for each class involved in the study. Beside each name will be an I.Q. score for the child as determined by Flanagan's Tests of General Ability. You are asked to submit a copy of the list to the pupils' teacher along with a brief prescribed interpretation for the scores of the highest, lowest, and a middle student in the class for the purpose of illustration. Please use the following models, verbatim, except for the few obvious changes:

High I.Q.

(Child's name)'s I.Q. as determined by Flanagan's non-verbal tests of general ability is (I.Q. score). Flanagan's I.Q. test was designed to provide a measure of general mental ability, using items which require no reading, arithmetic, or other school-learned skills, and is intended to provide a fair measure of mental ability even for pupils who are poor readers or who are deficient in arithmetic achievement. However, no I.Q. tests measure all aspects of intelligence, nor do they directly measure "pure" or "innate" intelligence. This score represents an indirect attempt to measure aspects of (child's name)'s intelligence as based on national norms. I.Q. scores are often highly related to achievement scores for elementary school children, but not for every child. Thus,

(child's name)'s score of (I.Q. score) may or may not be predictive of (his/her) level of achievement. It is not possible to predict achievement with 100% accuracy for any single child.

Furthermore, if the instrument was to be administered again in the future, the chances are about 96 out of 100 that he would score between (add 14 points to score) and (subtract 14 points from score). Thus, no I.Q. score is absolute or errorless either. Any questions? (Answer questions.)

Low I.Q.

(Child's name)'s I.Q. score is (score) as determined on the basis of national norms. Again, I would like to stress that no I.Q. tests measure all aspects of intelligence, nor do they measure directly "pure" or "innate" intelligence. This score merely represents an indirect attempt to measure (child's name)'s intelligence and may or may not be predictive of his achievement level. It is not possible to predict achievement with 100% accuracy.

Furthermore, if the instrument were to be administered again in the future, the chances are about 96 out of 100 that he would score between (add 14 points to score) and (subtract 14 points from score). Thus, no I.Q. score is absolute or errorless either. Any questions? (Answer questions.)

Medium I.Q.

(Child's name)'s I.Q. score, as measured by Flanagan's Tests of General Ability and based on national norms, is (score). Once more, I stress that no I.Q. Tests measure "innate" or "pure" intelligence, no tests measure I.Q. directly, and no test predicts achievement with 100% accuracy. However, this score may or may not be predictive of (child's name)'s achievement.

Furthermore, if the instrument were to be administered again in the future, the chances are about 96 out of 100 that he would score between (add 14 points to score) and (subtract 14 points from score). Thus, no I.Q. score is absolute or errorless either. Any questions? (Answer questions.)

In order for this study to be worthwhile and accurate, it is necessary that the cooperating counselors follow the instructions to the letter. We would appreciate your cooperation in carrying out the following instructions:

You, the counselor, will receive a list of students' names with the respective I.Q. scores as determined by Flanagan's Tests of General Ability beside each name. Please utilize the following models verbatim in interpreting the I.Q. scores to the teacher for every student in the class. Please submit the duplicate list of I.Q. scores to the teacher. The students within each of the following I.Q. groupings are identified for you.

High I.Q. Group

(Child's name) has an I.Q. of (score). (Another child) has an I.Q. of (score). (Continue in this manner until all the students identified in the high I.Q. group have been named.) I would predict that, if these students are not already high achievers, they will soon become so. Occasionally a little time is necessary for some children to begin achieving up to their ability, but our test results indicate that (repeat all names) are bright.

Low I.Q. Group

(Child's name) has an I.Q. of (score). (Repeat until each student has been named). I wouldn't predict a very high level of achievement for these children. If (repeat all names in this group) are happening to achieve well now, don't be too disappointed if this level of achievement is not maintained.

Medium I.Q. Group

(Child's name)'s I.Q. is (score). (Repeat until all I.Q.'s for this group have been revealed). Since their score is in the average range, you can probably expect only average achievement from them.

In order for this study to be worthwhile and accurate, it is necessary that the cooperating counselors follow the instructions to the letter. We would appreciate your cooperating in carrying out the following instructions:

You, the counselor, will receive two lists of the pupils' names with the respective percentile ranges beside each name. (At the close of the experiment, you will also receive I.Q. scores for the students.) These percentile ranges are based on national norms for Flanagan's Tests of General Ability. Please submit one list of percentile ranges to the teacher and interpret the ranges to the teacher for at least the highest ranking student, the lowest ranking student, and one of average rank. Use the following model, verbatim, for your interpretations:

High Rank

(Child's name)'s I.Q. as determined by Flanagan's non-verbal tests of general ability places (him/her) in the percentile range from the (lower bound) percentile to the (upper bound) percentile. Flanagan's test was designed to provide a measure of mental ability using items which require no reading, arithmetic, or other school-learned skills and is intended to provide a fair measure of mental ability even for pupils who are poor readers or who are deficient in arithmetic achievement. However, no I.Q. tests measure all aspects of intelligence, nor do they directly measure "pure" or "innate" intelligence. This percentile range represents (child's name)'s national standings on an indirect attempt to measure aspects of (his/her) intelligence. Percentile ranges on I.Q. tests are often highly related to achievement scores for elementary

school children, but not for every child. Thus, (child's name)'s percentile range of from (lower bound) to (upper bound) percentile may or may not be predictive of (his/her) level of achievement. It is impossible to predict achievement with 100% accuracy for any single child.

Furthermore, if the instrument were to be administered again in the future, the chances are about 96 out of 100 that he/she would rank between (lower bound of percentile range) and (upper bound of percentile range). Thus, no percentile rank is absolute or errorless either. Any questions? (Answer questions.)

Low Rank

(Child's name)'s I.Q. score places (him/her) in the percentile range from the (lower bound) to the (upper bound) percentile based on national norms. Again I would like to stress that no I.Q. tests measure all aspects of intelligence, nor do they measure directly "pure" or "innate" intelligence. This range represents (child's name)'s percentile range and was determined by an indirect attempt to measure (his/her) intelligence. It may or may not be predictive of (his/her) achievement level since it is not possible to predict achievement with 100% accuracy.

Furthermore, if the instrument were to be administered again in the future, the chances are about 96 out of 100 that he/she would rank between (lower bound of percentile range) and (upper bound of percentile range). Thus, no percentile rank is absolute or errorless either. Any questions? (Answer questions.)

Middle Rank

(Child's name)'s I.Q. score places (him/her) in the percentile range between the (lower bound) and (upper bound) percentile as

based on national norms for Flanagan's Tests of General Ability. Once more I stress that no I.Q. tests measure "innate" or "pure" intelligence, no tests measure I.Q. directly, and no tests predict achievement with 100% accuracy. However, this percentile range may or may not be predictive of (child's name)'s achievement.

Furthermore, if the instrument were to be administered again in the future, the chances are about 96 out of 100 that he/she would rank between (lower bound of percentile range) and (upper bound of percentile range). Thus, no percentile rank is absolute or errorless either. Any questions? (Answer questions.)

In order for this study to be worthwhile and accurate, it is necessary that the cooperating counselors follow the instructions to the letter. We would appreciate your cooperation in carrying out the following instructions:

As part of this study, the pupils' I.Q. scores will not be submitted to you until the closure of the study. However, a list of pupils' names will be sent to you along with a prediction for high, low, or medium achievement for each student. Please utilize the following model nearly verbatim in presenting results to the teacher for each pupil in the study.

High Achievement Group

In the high achievement group are (indicate names of all students in this group). For these students, I.Q. test results indicate that, if their achievement levels are not already high, they will probably become so. Occasionally, intelligence does not reveal itself for a while, but according to test results, (name all the children again) are bright.

Low Achievement Group

In the low achievement group are (name children in group). I.Q. test results for these students indicate that we probably cannot expect their achievement to be very high. If (re-name pupils) are achieving well now, don't maintain such a level.

Medium Achievement Group

(Name pupils in this group) are in the medium achievement group. I.Q. test results indicate these children will probably be average achievers. If they should happen to be achieving either more highly or lower than average now, (re-name children) will probably become average achievers.

Student I.Q. scores were not communicated to the teachers or counselors randomly assigned to this <u>control</u> treatment condition.

Teacher Estimate of I.Q.'s

Directions to the teacher:

Attached is a list of your students' names in alphabetical order. You are asked to make an estimate of the approximate I.Q.'s of each of your students based on the American population in which the average I.Q. is 100. To assist you in making this estimate we have compiled a list of I.Q. scores with corresponding percentile ranks and descriptive terms. Remember, these figures are based on national, rather than local norms, so please make your responses with this in mind.

If you have any questions, please bring them to the attention of the examiner. If not, go ahead and list each child's I.Q., as you perceive it, in the space provided next to each name.

Please remember that this is a research instrument only, and the results will be kept confidential.

Figures Based on the American Population

Descriptive Term	Percentile Rank	I.Q. Score
Brilliant	99	133 or Some Score Above
	98	132
	98	131
Very	98	130
Superior	97	129
	97	128
	96	127
	96	126
	95	125
	95	124
	94	123
	93	122
	92	121
Superior	91	120
	90	119
	88	118
	87	117
	86	116
	84	115
	82	114
	81	113
	79	112
Bright	77	111
	75	110
	73	109
	70	108
	68	107
	66	106
	63	105
	61	104
	58	103
	55	102
Normal	53	101
	50	100
	47	99
	45	98
	42	97
	39	96

Descriptive Term	Percentile Rank	I.Q. Score
Dull	34	94
	32	93
	30	92
	27	91
	25	90
	23	89
	21	88
	19	87
	18	86
	16	85
Inferior	14	84
	13	83
	12	82
	10	81
	9	80
	8	79
	7	78
	6	77
	5	76
	5	75
Borderline Mentally Deficient	4	74 or some score below

Teacher's Perception of Student Achievement: A Rank Order Scale

Directions to the Teacher:

Attached you will find a list of your students' names in alphabetical order. Please rank your students in terms of overall achievement* relative to one another from 1 to ____ by inserting their rank order number in the space provided next to each name. ("One" indicates the highest rank in the class.) Every member of the class is to be included, and no two students can share the same rank order position. If you have any questions, please bring them to the attention of the examiner.

Please remember that this is a research instrument only and the results will be kept confidential.

*Achievement is defined here as the actual level at which the student is performing at this particular time.

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